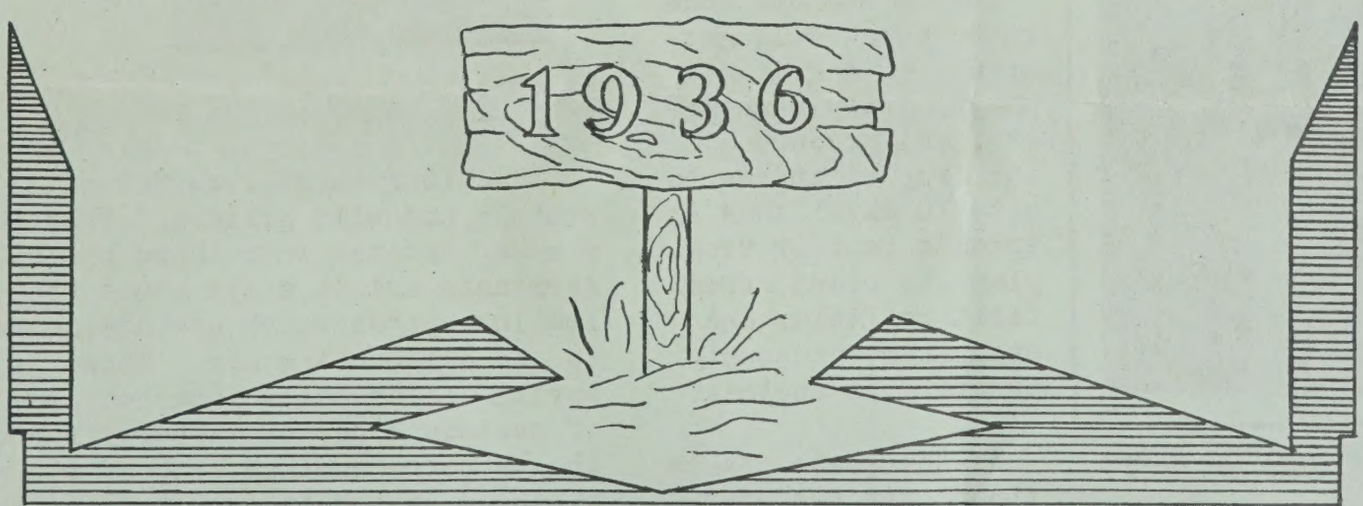
BARBERRY ERADICATION

IN

South Dakota



BARBERRY ERADICATION
IN
SOUTH DAKOTA

A Circular Letter for South Dakota boys and girls who are interested in Black Stem Rust Control

Issued by
Division of Plant Disease Control
Bureau of Entomology & Plant Quarantine
U. S. Department of Agriculture
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Brookings, South Dakota

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WARM DAMP WEATHER FAVORS RUST

All plants need moisture, light, plant food, and favorable temperature in which to grow. Stem rust of wheat, oats, barley, and rye is no exception. It is a tiny fungous plant that reproduces by means of spores, which correspond in function to the seeds of higher plants.

Stem rust on wheat

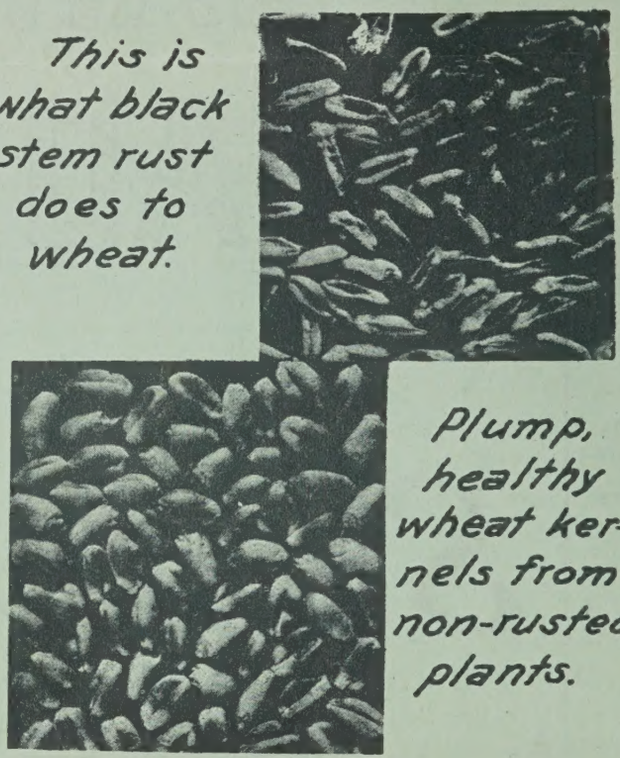
During May and June, rust spores will germinate on a grain plant, grow to maturity, and produce a new crop of spores in 6 to 10 days; thus it spreads rapidly from plant to plant, from field to field, and even from one county or State to another.

As the grain plants ripen, the rust fungus also prepares for the winter by producing tiny dark-brown spores which remain alive until the next spring on old straw,

RUST INJURES QUALITY OF GRAIN CROPS

If stem rust appears in a field of wheat, oats, barley or rye about the time the grain begins to head, and warm damp weather favors the rapid spread of the fungus, the crop may be so severely damaged that it is not worth harvesting. Badly rusted grain fields produce lightweight, shriveled kernels that are unfit for milling purposes. Preventing the disease helps to lower the cost of production by increasing yields per acre and protecting the quality of the harvested grains.

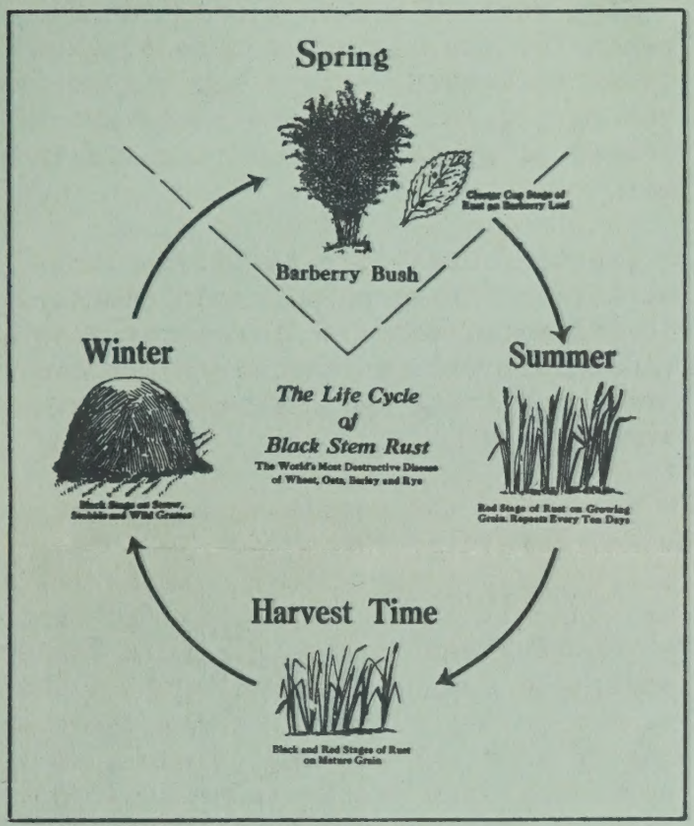
This is what black stem rust does to wheat.



Plump, healthy wheat kernels from non-rusted plants.

(Continued from Column 1)
stubble and wild grasses. When the weather becomes warm these winter spores germinate and in a few hours produce smaller spores which are discharged into the surrounding air. These tiny spring spores can attack only the leaves of certain kinds of barberry bushes. On the barberry another crop of spores is produced, which in turn infects the growing grain plants; thus the diseased leaves of barberry become a source of rust infection to the new grain crops.

REMOVING BARBERRY ELIMINATES SPRING HOME FOR STEM RUST



A good way to reduce the amount of loss caused by stem rust in South Dakota is to eradicate the varieties of barberry that serve as a spring home for the rust fungus.

Not only in the United States but throughout the world, farmers are protecting their grain crops from stem rust by eradicating barberry bushes. In certain parts of Denmark, Germany, England, and France, destructive epidemics of the disease no longer occur because barberry bushes have been removed.

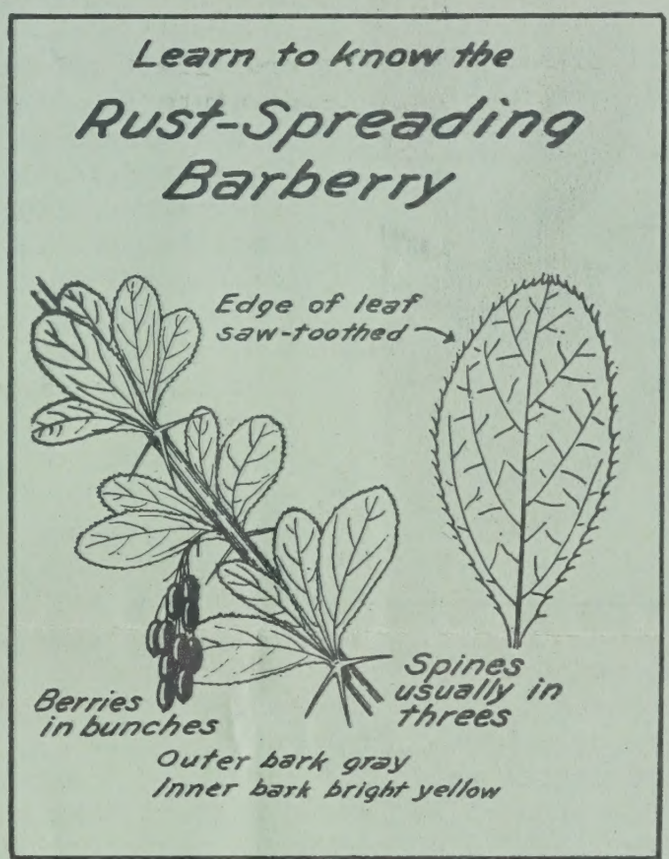
Barberry eradication was first begun in South Dakota in 1918. Since then 135,810 bushes have been destroyed. However, remaining barberries must be destroyed to further reduce rust losses and prevent the bushes from spreading.

During 1935, 852 common barberries were located and destroyed in South Dakota in the following counties: Brookings, Lincoln, Minnehaha, Moody, Turner, Union, and Yankton.

RUST-SPREADING BARBERRY EASILY RECOGNIZED

The rust-spreading barberry, brought from Europe to America by the New England Colonists, was carried westward by pioneers who did not know that the rust fungus lived on the leaves of the barberry during one stage of its life. Birds ate the berries produced on the few bushes planted in South Dakota and scattered seed to woodlots, stream banks, pastures, and other uncultivated lands. Now barberries are found growing wild.

An average-sized barberry bush is from 5 to 6 feet tall; the young plants of course are smaller, and the very old ones may be 10 to 12 feet high. The following cut shows how to distinguish common barberries from other shrubs.

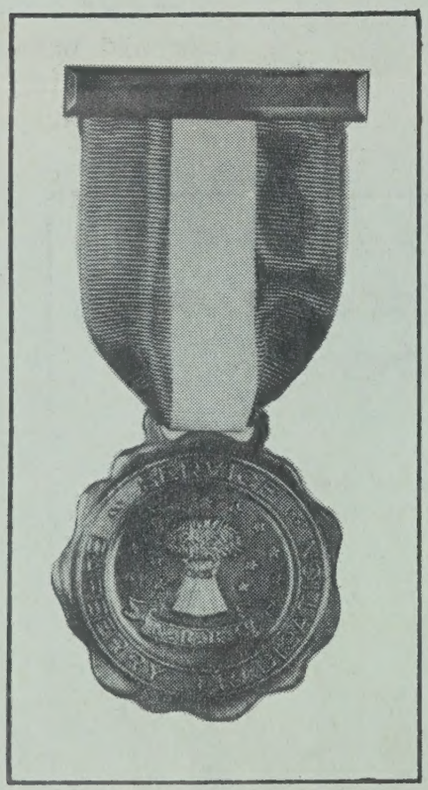


IMPORTANT

Not all kinds of barberry harbor the stem-rust disease. For example, the Japanese barberry, so commonly grown on lawns, does not spread rust and may be planted where desired without endangering small-grain crops.

BARBERRY REPORTS BRING PRIZES

The Conference for the Prevention of Grain Rust, with headquarters at Minneapolis, Minn., will present a medal like the one pictured below to any boy or girl who reports the location of one or more of the rust-spreading barberry bushes. If you think you know where there are some barberry bushes, write a letter to George W. Eade, Box 66, State College Station, Brookings, South Dakota, telling him about them. Send a twig of the suspected bush with your letter, and be sure to include your name and address.



Twelve thousand boys and girls in South Dakota have become members of the NATIONAL RUST BUSTERS' CLUB. You too can join and obtain a membership pin by writing to Mr. Eade, telling him that you have studied about stem rust and that you are going to watch for barberry bushes.

Forty-two South Dakota club members have received medals for reporting barberry bushes. Eldo Swenson, of Lincoln County, has received his third degree award for reporting 3 different properties having rust-spreading barberries. Eldo now has a silver medal.

According to Mr. Donald G. Fletcher, 300 Lewis Building, Minneapolis, Minnesota, who is executive secretary of the Conference for the Prevention of Grain Rust, more than 3,200 boys and girls in 13 North Central States have been awarded medals for reporting the location of barberry bushes.

FACTS ABOUT STEM RUST

Stem rust is a tiny plant that depends for its living upon food taken from the leaves of barberry bushes in the spring, and from the stems and leaves of grain plants during the summer.

The tiny dust-like particles that appear on the stems of grain plants infected with rust are the spores which, under favorable moisture and temperature conditions, will produce other rust plants.

There are two possible sources of stem rust in South Dakota, (1) that which comes from barberry bushes remaining within the State and (2) that which is blown in from southern States where the fungus lives throughout the winter in the summer or repeating stage. During a normal growing season rust spreading from the South arrives too late to cause very much damage.

Rust often spreads from barberry bushes in South Dakota to nearby grains and grasses before June 1.

RUST DAMAGE CAN BE REDUCED

(1) By eradicating rust-spreading barberries.
(2) By planting rust-resistant varieties of grain.
(3) By sowing early-maturing varieties.
(4) By planting grain crops early on well-prepared and well-drained soil.

To protect South Dakota grain crops destroy every rust-spreading barberry, because a single bush may be responsible for a rust epidemic extending throughout an entire county.